



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,880	12/13/2001	Viktors Berstis	AUS920011011US1	2607
45993	7590	11/04/2004	EXAMINER	
IBM CORPORATION (RHF) C/O ROBERT H. FRANTZ P. O. BOX 23324 OKLAHOMA CITY, OK 73123			PERUNGAVOOR, SATHYANARAYA V	
			ART UNIT	PAPER NUMBER
			2625	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/015,880

Applicant(s)

BERSTIS, VIKTORS

Examiner

Sath Perungavoor

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/13/2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/13/2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/13/2001.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

Figures 3a and 3b should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Double Patenting*

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-4, 9, 10, 14-17, 21 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-

Art Unit: 2625

4,8,9,13,14,17 of copending Application No. 10015492. Although the conflicting claims are not identical, they are not patentably distinct from each other because the invention disclosed in the instant application and claimed in the copending application are obvious variants over each other. The only difference of sequential exposure of an image would be at least obvious if not inherent.

Furthermore, claims in the instant application are broader than the claims in the copending application.

For example, claim 1 of instant application encompass the subject matter that overlaps with the subject matter covered by claim 1 of the copending application as

10 follows:

Copending application discloses the two-dimensional sensor array (Lines 7-8, Claim 1) and instant application discloses a row of sensors. Two dimensional sensor array encompasses both rows and columns.

Copending application discloses the non-uniform distribution of sensors (Lines 3-6, Claim 1), while the instant application discloses varying distances between sensors. It is obvious that non-uniform and varying are synonyms.

Copending application discloses the sampling of sensors (Lines 10-12, Claim 1) and the instant application discloses sampling the sensors by sequentially exposing the image. Sampling an image with one row of sensors would entail sequential exposure to  
20 an image.

Similarly, Claims 2-4,9,14-17,21 of instant application encompass the subject matter that overlaps with the subject matter covered by claims 2-4,7,9,12-14,17 respectively of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

10 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-6, 8-10, 14-16, 18, 19, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Resnikoff et al (U.S. Patent Number 4,574,311).

20 Regarding claim 1, Resnikoff et al. discloses a method of producing a sampled image comprising the steps of (fig. 6):

providing a plurality of sensor positions in a row arrangement non-uniformly distributed with varying distances between each adjacent pair of sensor positions according to a first predetermined schema and (Fig. 9b, Col. 4 Lines 22-26 and 35-36, Col. 5 Lines 45-49; Cited reference discloses the Poisson disc process, which is a non-

Art Unit: 2625

uniform distribution schema. This schema is applied to provide sensor positions in a row arrangement.);

sampling an image by sequentially exposing image portions to said row arrangement to obtain a first set of data samples representing non-uniformly spaced points in said image (Col. 7 Lines 25-31 and 37-39).

Regarding claim 2, Resnikoff et al. discloses the method as set forth in Claim 1 wherein said first predetermined schema comprises a pseudo-random schema (Fig. 9b, Col. 4 Lines 22-26).

10

Regarding claim 4, Resnikoff et al. discloses the method as set forth in Claim 1 further comprising the step of assigning a reference identifier to said first predetermined schema (Fig. 12, Col. 9 Lines 30-55).

Regarding claim 5, Resnikoff et al. discloses the method as set forth in Claim 1 wherein said step of sampling an image by sequentially exposing image portions to said row arrangement comprises selectively sampling according to a second predetermined schema such that each sensor position is sampled in a non-uniformly varying spatial manner (Col. 3 Lines 23-27, Col. 7 Lines 25-31 and 37-39).

20

Art Unit: 2625

Regarding claim 6, Resnikoff et al. discloses the method as set forth in Claim 5 wherein said second predetermined schema comprises a pseudo-random schema (Col. 8 Lines 10-15; Poisson disc sampling disclosed is a pseudo-random schema).

Regarding claim 8, Resnikoff et al. discloses the method as set forth in Claim 5 further comprising the step of assigning a reference identifier to said first predetermined schema (Fig. 12, Col. 9 Lines 30-55).

Regarding claim 9, Resnikoff et al. discloses the method as set forth in Claim 1 further comprising the step of interpolating a set of data samples representing uniformly spaced data samples from said first set of data samples (Col. 9 Lines 27-29 and 36-40).

Regarding claim 10, Resnikoff et al. discloses a computer readable medium encoded with software for producing a sampled image using an sensor array having sensor positions in a row arrangement distributed with varying distances between each adjacent pair of sensor positions according to a first predetermined schema, said software causing a processor to perform the steps of (Col. 9 Lines 25-29 and 62-68):

sequentially exposing image portions to said row arrangement and sampling said (Col. 7 Lines 37-39);

sensor positions to obtain a first set of data samples representing non-uniformly spaces points in said image (Col. 7 Lines 25-34, Col. 9 Lines 25-29).

Art Unit: 2625

Regarding claim 14, Resnikoff et al. discloses the computer readable medium as set forth in Claim 10 further comprising software for interpolating a set of data samples representing uniformly spaced data samples from said first set of data samples (Col. 9 Lines 25-29 and 62-68).

Regarding claim 15, Resnikoff et al. discloses a system for producing a sampled image comprising (fig. 6):

10 a plurality of sensors positioned in a row arrangement distributed with varying distances between each adjacent pair of sensor according to a first predetermined schema and (Col. 5 Lines 45-49, Col. 4 Lines 22-26 and 35-36);

means for sampling an image by sequentially exposing image portions to said row arrangement to obtain a first set of data samples representing non-uniformly spaced points in said image (Col. 7 Lines 25-31 and 37-39).

Regarding claim 16, Resnikoff et al. discloses the system as set forth in Claim 15 wherein said first schema for sensor positioning is a pseudo-random schema (Fig. 9b, Col. 4 Lines 22-26).

20 Regarding claim 18, Resnikoff et al. discloses the system as set forth in Claim 15 wherein said means for sampling an image composes a means for selectively sampling according to a second predetermined schema such that each sensor position is sampled in a varying spatial manner (Col. 3 Lines 23-27, Col. 7 Lines 25-31 and 37-39).



Regarding claim 19, Resnikoff et al. discloses the system as set forth in Claim 18 wherein said second predetermined schema comprises a pseudo-random schema (Col. 8 Lines 10-15; Poisson disc sampling disclosed is a pseudo-random schema).

Regarding claim 21, Resnikoff et al. discloses the system as set forth in Claim 15 further comprising a means for generating a uniformly-spaced data sample by interpolating said first set of data samples (Col. 9 Lines 27-29 and 36-40).

10

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20        Claims 3, 7, 13, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Resnikoff et al in view of Tansley (U.S. Patent Number 5,818,977).

Regarding claim 3, Resnikoff et al. discloses that any schema can be used in the arrangement of sensors (Col. 5 Lines 62-64). However, Resnikoff et al. does not expressly disclose the use of a nonlinear polynomial schema.

In the same field of endeavor, Tansley discloses a nonlinear polynomial schema to define the sensor characteristics (Col. 2 Lines 50-52 and 62-66).

Resnikoff et al. clearly states that any schema can be used in the arrangement of sensors. Mere interpretation of old and well-know schema as nonlinear polynomial schema into Resnikoff et al, would have been obvious modification for one of ordinary skill in the art. It would have also been obvious to one with ordinary skill in the art at the time of invention to combine the teachings of Resnikoff et al. and Tansley such that a nonlinear polynomial schema is realized, because the modification would avoid moiré effect that becomes apparent at harmonics and a nonlinear polynomial schema would be used provided that requirement of broad spectral or harmonic content is met.

10        Regarding claim 13, Resnikoff et al. the computer readable medium as set forth in the discussion claim 11. Resnikoff et al. discloses that any schema can be used in sampling of sensors (Col. 5 Lines 62-64). Though Resnikoff et al. does not expressly disclose the use of a nonlinear polynomial schema.

Tansley discloses a nonlinear polynomial schema to define the sensor characteristics (Col. 2 Lines 50-52 and 62-66).

Resnikoff et al. clearly states that any schema can be used in sampling. Mere interpretation of old and well-know schema as nonlinear polynomial schema into Resnikoff et al, would have been obvious modification for one of ordinary skill in the art. It would have also been obvious to one with ordinary skill in the art at the time of  
20    invention to combine the teachings of Resnikoff et al. and Tansley such that a nonlinear polynomial schema is realized, because the modification would avoid moiré effect that becomes apparent at harmonics and a nonlinear polynomial schema would be used

Art Unit: 2625

provided that requirement of broad spectral or harmonic content is met. It would have also been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Resnikoff et al. and develop software to perform selective sampling on sensors with a nonlinear polynomial schema. Since most image processing systems include processors that require software to perform functions. It would be obvious if not inherent to use software to perform selective sampling with a nonlinear polynomial schema.

10 Regarding claims 7 and 20, Resnikoff et al. discloses that any schema can be used in sampling of sensors (Col. 5 Lines 62-64). Though Resnikoff et al. does not expressly disclose the use of a nonlinear polynomial schema.

Tansley discloses a nonlinear polynomial schema to define the sensor characteristics (Col. 2 Lines 50-52 and 62-66).

Resnikoff et al. clearly states that any schema can be used in the sampling of sensors. Mere interpretation of old and well-know schema as nonlinear polynomial schema into Resnikoff et al, would have been obvious modification for one of ordinary skill in the art. It would have also been obvious to one with ordinary skill in the art at the time of invention to combine the teachings of Resnikoff et al. and Tansley such that a nonlinear polynomial schema is realized, because the modification would avoid moiré  
20 effect that becomes apparent at harmonics and a nonlinear polynomial schema would be used provided that requirement of broad spectral or harmonic content is met.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Resnikoff et al

Regarding claim 11, Resnikoff et al. discloses a computer readable medium encoded with software for sampling sensors as set forth in the discussion for claim 10. Resnikoff et al. also discloses selectively sampling sensors as set forth in the discussion for claim 5.

Resnikoff et al. does not expressly disclose the software for selectively sampling sensors.

10 It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Resnikoff et al. and develop a software to perform selective sampling on sensors. Since most image processing systems include processors that require software to perform functions. It would be obvious if not inherent to use software to perform selective sampling.

Regarding claim 12, Resnikoff et al. further teaches the use of pseudo-random schema (Col. 8 Lines 10-15; Poisson disc sampling disclosed is a pseudo-random schema). It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Resnikoff et al. and develop software to perform  
20 selective sampling on sensors with a pseudo-random schema. Since most image processing systems include processors that require software to perform functions. It

would be obvious if not inherent to use software to perform selective sampling with a pseudo-random schema.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sath Perungavoor whose telephone number is (703) 306-4116. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta whose telephone number is (703) 308-5246, can be reached on Monday to Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/015,880

Art Unit: 2625



Sath Perungavoor

Art Unit 2625

28 October 2004

Page 13



**BHAVESH M. MEHTA**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**